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**Water Potential Practice Worksheet #2**

Mrs. Krouse, AP Biology

*\*\*\*Thank you to Ms. Glick for providing this assignment!\*\*\**

1. If a plant cell’s ΨP = 2 bars and its Ψs = -3.5 bars, what is the resulting Ψ?
2. The plant cell from Question #1 is placed in beaker of sugar water with Ψs = -4.0 bars. In which direction will the net flow of water be (into or out of the plant cell)?
3. The original cell from Question #1 is placed in a beaker of sugar water with Ψs = -0.15 MPa (megapascals). We know that 1 MPa = 10 bars. In which direction will the net flow of water be?
4. The value for Ψ in root tissue was found to be -3.3 bars. If you place the root tissue in a 0.1 M solution of sucrose at 20 degrees Celsius in an open beaker, what is the Ψ of the solution, and in which direction will the net flow of water be?
5. NaCl dissociates (breaks down) into two particles in water—Na+ and Cl-. If the solution in Question #4 contained 0.1 M NaCl instead of 0.1 M sucrose, what is the Ψ of the solution, and in which direction will the net flow of water be?
6. A plant cell with a Ψs of -7.5 bars keeps a constant volume when immersed in an open-beaker solution that has Ψs of -4 bars. What is the cell’s ΨP?
7. At 20 degrees Celsius, a plant cell containing 0.6 M glucose is in equilibrium with its surrounding solution containing 0.5 M glucose in an open container. What is the cell’s ΨP?

*Note: Glucose does not break down into multiple particles in water.*